

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method of measuring renal function in a living subject using computed tomography comprising the steps of:
 - a) obtaining a CT number (CT_{PRE}) of arterial blood prior to addition of a radiographic contrast agent to the blood,
 - b) providing a radiographic contrast agent to the blood,
 - c) obtaining a CT number (CT_A) of arterial blood after addition of the radiographic contrast agent to the blood,
 - d) obtaining a CT number (CT_V) of blood in a renal vein after addition of the agent to the blood, and
 - e) determining renal function from the obtained CT numbers.
2. (Original) The method as defined by claim 1 wherein the renal function is renal extraction fraction.
3. (Original) The method as defined by claim 2 wherein renal extraction fraction (EF) is given by:
$$EF = \frac{CT_A - CT_V}{CT_A - CT_{PRE}}$$
4. (Original) The method as defined by claim 3 wherein step b) includes providing iohexol.
5. (Original) The method as defined by claim 3 wherein step b) includes providing iothalamate.
6. (Original) The method as defined by claim 3 wherein step b) includes providing gadolinium-DTPA.
7. (Original) The method as defined by claim 1 wherein step b) includes providing iohexol.

8. (Original) The method as defined by claim 1 wherein step b) includes providing iothalamate.
9. (Original) The method as defined by claim 1 wherein step b) includes providing gadolinium-DTPA.
10. (Previously Presented) A method of determining renal extraction fraction (EF) for a kidney in a living subject, using a computed tomography (CT) apparatus comprising the steps of:
- a) obtaining a measure of x-ray transmission through arterial blood prior to addition of a radiographic contrast agent to the blood, using the CT apparatus,
 - b) providing a radiographic contrast agent to the blood,
 - c) obtaining a measure of x-ray transmission through arterial blood after addition of the radiographic contrast agent to the blood, using the CT apparatus,
 - d) obtaining a measure of x-ray transmission through renal vein blood after addition of the radiographic contrast agent to the blood, and
 - e) determining renal extraction fraction from the measures of x-ray transmission in steps a), and c), and d).
11. (Original) The method as defined by claim 10 wherein the measures of x-ray transmission are obtained using computed tomography (CT).
12. (Original) The method as defined by claim 11 wherein the measures of x-ray transmission are CT numbers.
13. (Original) The method as defined by claim 11 wherein the radiographic contrast agent is selected from the group consisting of iohexol, iothalamate, and gadolinium-DTPA.
14. (Original) The method as defined by claim 10 wherein the radiographic contrast agent is selected from the group consisting of iohexol and iothalamate.
15. (New) The method as defined by claim 1 wherein the CT numbers (CT_{PRE} , CT_A , CT_V) are each calculated as a mean value of measured image intensities for a plurality of voxels at different locations in one or more axial CT scans.

16. (New) The method as defined by claim 15 wherein the CT number (CT_v) of venous blood is calculated using voxels selected in a venous region to exclude arterial regions.

17. (New) The method as defined by claim 15 wherein the renal function is calculated based on a difference between CT numbers.